

Application No. 10/757,643
Response to Office Action

Customer No. 01933

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE SPECIFICATION

The specification has been amended to correct some minor informalities of which the undersigned has become aware, including the informality pointed out by the Examiner.

In particular, the specification has been amended at pages 5-6 to better accord with the drawings. In addition, the specification has been amended at page 9, line 9 to correct an obvious clerical error so that the sentence at page 9, lines 8-9 accords with the remainder of the paragraph at page 9, lines 8-13. Still further, the specification has been amended at page 10 to mention reference numeral 82 in Fig. 9B, and the specification has been amended at page 11 to correct a minor grammatical error.

No new matter has been added, and it is respectfully requested that the amendments be approved and entered, and that the objection to the specification be withdrawn.

THE CLAIMS

Claim 1 has been amended to recite subject matter formerly recited in now canceled claims 2 and 13.

Application No. 10/757,643
Response to Office Action

Customer No. 01933

In addition, claims 4, 8, 11 and 12 have been amended to better accord with amended independent claim 1.

Still further, claims 1, 4 and 6-12 have been amended to make some minor grammatical improvements and to correct some minor antecedent basis problems so as to put them in better form for issuance in a U.S. patent. In this connection, it is respectfully requested that, upon allowance of claim 1, withdrawn claims 8-12 depending therefrom also be considered on the merits and allowed.

No new matter has been added, and it is respectfully requested that the amendments to claims 1, 4 and 6-12 be approved and entered.

THE PRIOR ART REJECTION

Claims 1-7 and 13 were rejected under 35 USC 103 as being obvious in view of any one of Prior Art Fig. 1 of the present application, JP 5-291079 ("Kayamori") described in the Background of the Invention, US 2004/0103508 ("Kanetake"), and USP 6,819,546 ("Kuriyama"). These rejections, however, are respectfully traversed with respect to the claims as amended hereinabove.

According to the present invention as recited in amended claim 1, a chip type solid electrolytic capacitor is provided which comprises: a capacitor element including an anode lead and a cathode layer; a packaging resin covering the capacitor

Application No. 10/757,643
Response to Office Action

Customer No. 01933

element and having a mount surface, and side surfaces that are adjacent to the mount surface and opposite to each other; an anode terminal electrically connected to the anode lead and coupled to the packaging resin; and a cathode terminal electrically connected to the cathode layer and coupled to the packaging resin.

In addition, according to the present invention as recited in amended claim 1, each of the anode terminal and the cathode terminal extends along the mount surface and along a respective one of the side surfaces to have an outer surface exposed from the packaging resin and to have an inner surface opposite to the outer surface. As recited in amended claim 1, each of the anode terminal and the cathode terminal has a stepwise shape including an upper step portion at the respective one of the side surfaces and a lower step portion apart from the side surface, wherein the upper step portion has a larger height measured in a height direction from the mounting surface than the lower step portion. And as recited in amended claim 1, the anode lead is supported by the upper step portion of the anode terminal and the capacitor element is supported at least by the lower step portion of the cathode terminal.

Thus, according to the structure of the present invention as recited in amended claim 1, the anode and cathode terminals are step shaped so as to have upper and lower step portions, and the

Application No. 10/757,643
Response to Office Action

Customer No. 01933

upper step portion of the anode terminal supports the anode lead. For example, as described in the specification at page 10, lines 5-10, the upper step portion of the anode terminal may have a flat upper surface or an upper surface with a V-groove portion therein. The anode lead is brought into contact with the flat or V-groove portion and is welded into place. With this structure, the anode lead is supported in a manner that increases the rigidity and strength of the capacitor.

In addition, the step structure of the anode and cathode terminals of the claimed present invention does not consume as much volume as the structure of the prior art whereby a metal sheet is bent. Thus, it is respectfully submitted that the chip type solid electrolytic capacitor according to the claimed present invention has a small size and simple structure, and is high in volume efficiency in a portion of the capacitor element that contributes to capacitance with respect to the total volume of the capacitor.

By contrast, it is respectfully submitted that the Prior Art of Fig. 1, Kayamori and Kanetake all disclose anode and cathode terminals that are formed by bending a metal sheet. And it is respectfully submitted that these anode and cathode terminals do not include upper and lower step portions having the structure recited in amended claim 1, and moreover, extend for a long distance. The structures shown in the Prior Art of Fig. 1,

Application No. 10/757,643
Response to Office Action

Customer No. 01933

Kayamori and Kanetake therefore consume more volume than the capacitor of the claimed present invention, and the long terminals thereof are more susceptible to deformation than the terminals of the claimed present invention, thereby reducing the rigidity and strength of the capacitor.

It is respectfully pointed out, moreover, that according to the Prior Art of Fig. 1 and Kayamori, the anode lead is connected to a lower surface of an end region of the anode terminal and therefore is not positively supported by the anode terminal, in the manner of the claimed present invention.

Still further, it is respectfully pointed out that Fig. 74, in particular, of Kuriyama, shows an anode lead 6b connected to an anode terminal layer 18 and a cathode terminal layer 19 connected to the capacitor element 6. The terminal layers of Kuriyama are made of plating material or a conductive paste, and therefore, as can be seen in Fig. 74 thereof, clearly do not have a supporting function in the manner of the terminals of the claimed present invention. Indeed, it is respectfully pointed out that the capacitor element 6 and anode lead 6a of Kuriyama are supported by the protection package 17 and resin base 11, while the layers 18 and 19 are formed on external surfaces of the package 17. In addition, is respectfully submitted that the layers 18 and 19 of Kuriyama do not at all correspond to the

Application No. 10/757,643
Response to Office Action

Customer No. 01933

structure of the terminals as recited in amended claim 1, whereby a capacitor element with more strength and rigidity is achieved.


In view of the foregoing, it is respectfully submitted that the present invention as recited in amended claim 1, and claims 4 and 6-12 depending therefrom, clearly patentably distinguishes over Prior Art Fig. 1, Kayamori, Kanetake and Kuriyama, taken singly or in any combination, under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned for prompt action.

Respectfully submitted,


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